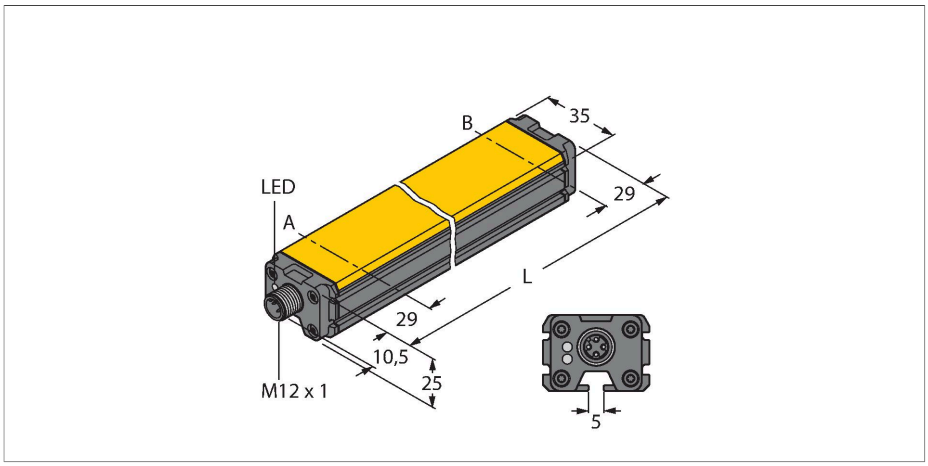
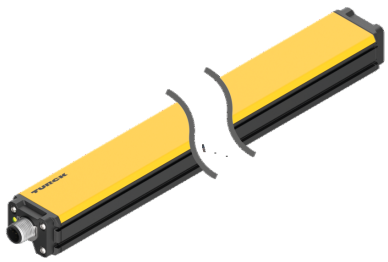
# LI500P0-Q25LM0-IOLX3-H1141
# Inductive Linear Position Sensor – IO-Link



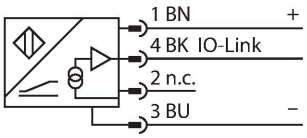
## Technical data

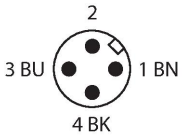
| | |
|---|---|
| Type | LI500P0-Q25LM0-IOLX3-H1141 |
| ID | 100012828 |
| Measuring principle | Inductive |
| **General data** | |
| Measuring range | 500 mm |
| Nominal distance | 1.5 mm |
| Blind zone a | 29 mm |
| Blind zone b | 29 mm |
| Repeat accuracy | ≤ 0.02 % of full scale |
| Linearity deviation | ≤ 0.05 % f.s.also under the influence of shock and vibration |
| Temperature drift | ≤ ± 0.0001 %/K |
| Hysteresis | omitted as a matter of principle |
| **Electrical data** | |
| Operating voltage $U_B$ | 15…30 VDC |
| Ripple $U_{ss}$ | ≤ 10 % $U_{Bmax}$ |
| Isolation test voltage | 0.5 kV |
| Short-circuit protection | yes |
| Wire break/reverse polarity protection | yes (voltage supply) |
| Communication protocol | IO-Link |
| Diagnostic | Positioning element not within detection range via diagnostic bit |
| Sample rate | 5000 Hz |
| Current consumption | < 100 mA |
| **IO-Link** | |
| IO-Link specification | V 1.1 |
| Programming | FDT/DTM |
| Communication mode | COM 3 (230.4 kBaud) |

## Features

- Rectangular, aluminium / plastic
- Versatile mounting possibilities
- Measuring range displayed via LED
- Immune to electromagnetic interference
- Extremely short blind zones
- Process value in 32-bit IO-Link telegram
- 15…30 VDC
- M12 × 1 male connector, 4-pin

## Wiring diagram




## Functional principle

The measuring principle of linear position sensors is based on RLC coupling between the positioning element and the sensor, whereby an output signal is provided proportional to the position of the positioning element. The rugged sensors are wear and tear-free, thanks to the contactless operating principle. They convince through their excellent repeatability, resolution and linearity within a broad temperature range. The innovative technology ensures a high immunity to electromagnetic DC and AC fields.

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## Technical data

| | |
|---|---|
| Process data width | 32 bit |
| Minimum cycle time | 1 ms |
| Function pin 4 | IO-Link |
| **Mechanical data** | |
| Design | Profile, Q25L |
| Dimensions | 558 x 35 x 25 mm |
| Housing material | Aluminum/plastic, PA6-GF30, Anodized |
| Active area material | Plastic, PA6-GF30 |
| Electrical connection | Connector, M12 × 1 |
| **Environmental conditions** | |
| Ambient temperature | -25…+70 °C |
| Vibration resistance (EN 60068-2-6) | 20 g; 1.25 h/axis; 3 axes |
| Shock resistance (EN 60068-2-27) | 200 g; 4 ms ½ sine |
| Protection class | IP67 |
| MTTF | 138 years acc. to SN 29500 (Ed. 99) 20 °C |
| Power-on indication | LED, Green |
| Measuring range display | multifunction LED, green, yellow, yellow flashing |
| UL certificate | E210608 |

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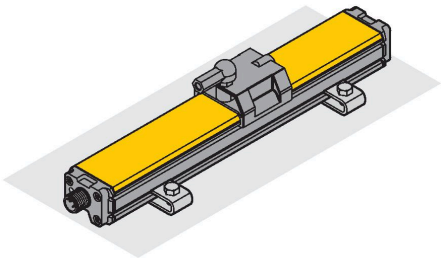
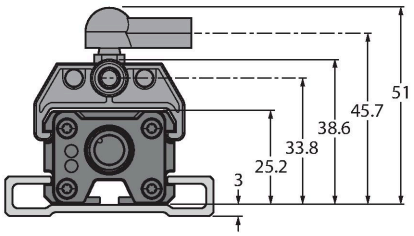
## Mounting instructions

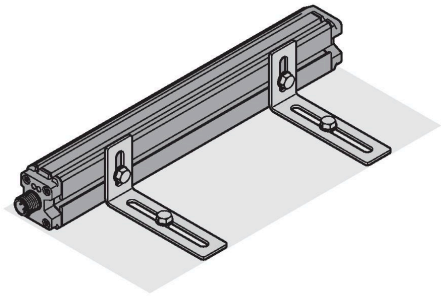
| Mounting instructions/Description |
|---|





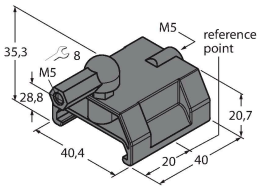

Extensive mounting accessories provide various options for installation. The measuring principle of RLC coupling makes the sensor immune to magnetized metal splinters and other interference fields.

LED indicates measuring range
Green:
Positioning element is within the measuring range
Yellow:
Positioning element is within the measuring range, low signal intensity (e.g. distance too large)
Yellow flashing:
Positioning element is outside the detection range



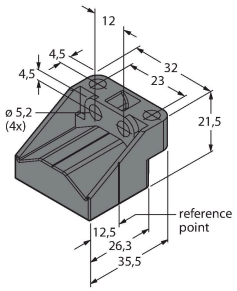
## Accessories

| P1-LI-Q25L | 6901041 |
|---|---|



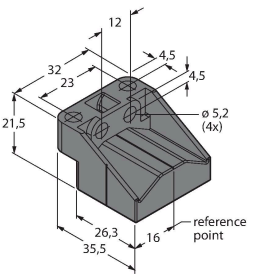

Guided positioning element for linear position sensors LI-Q25L, inserted in the groove of the sensor

| P2-LI-Q25L | 6901042 |
|---|---|



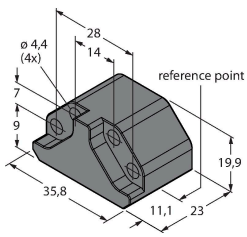

Floating positioning element for linear position sensors LI-Q25L; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 5 mm or misalignment tolerance of up to 4 mm.

| P3-LI-Q25L | 6901044 |
|---|---|




Floating positioning element for Li-Q25L linear position sensors; operational at an offset of 90 ; nominal distance to sensor 1.5 mm; pairing with linear position sensor at a distance of up to 5 mm; misalignment tolerance of up to 4 mm

| P6-LI-Q25L | 6901069 |
|---|---|




Floating positioning element for linear position sensors LI-Q25L; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 5 mm or misalignment tolerance of up to 4 mm.

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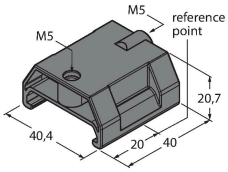
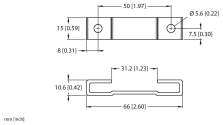
| P7-LI-Q25L | 6901087 |
|---|---|



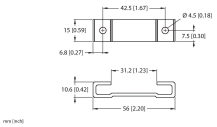

Guided positioning element for linear position sensors LI-Q25L, without ball joint

| M1-Q25L | 6901045 |
|---|---|



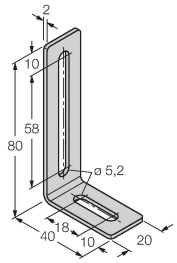
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag

| M2-Q25L. | 6901046 |
|---|---|



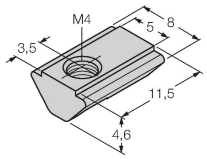
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag

| M4-Q25L | 6901048 |
|---|---|



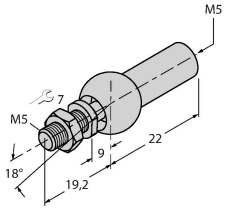

Mounting bracket and sliding block for linear position sensors LI-Q25L; material: Stainless steel; 2 pcs. per bag

| MN-M4-Q25 | 6901025 |
|---|---|



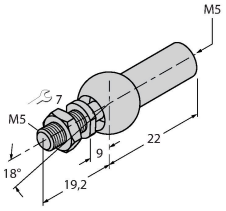

Sliding block with M4 thread for the backside profile of the LI-Q25L; material: galvanized steel; 10 pcs. per bag

| AB-M5 | 6901057 |
|---|---|



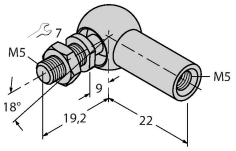

Axial Joint for Guided Positioning Elements

| ABVA-M5 | 6901058 |
|---|---|




Axial joint for guided positioning element, stainless steel

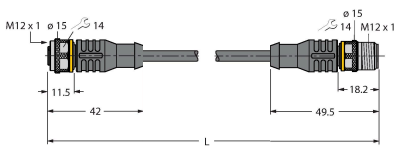
| RBVA-M5 | 6901059 |
|---|---|




Angle joint for guided positioning element, stainless steel

## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
| | RKC4T-2-RSC4T/TXL | 6625604 | Extension cable, M12 female connector, straight, 3-pin to M12 male connector, straight, 3-pin; cable length: 2 m, jacket material: PUR, black; cULus approval |

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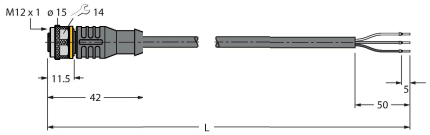
|  | RKC4T-2/TXL | 6625500 | Connection cable, M12 female connector, straight, 3-pin, cable length: 2 m, jacket material: PUR, black; cULus approval |

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